

Rational men and emotional women?

Pro-male bias and the false consensus effect in
evaluations of rationality

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Abstract

Prejudice against women is often stated as a reason why women do not achieve the same success as men in the workplace. Previous research has suggested that this discrimination may in part be due to a pro-male evaluation bias. Evaluations of others are not only affected by their gender, but also by traits belonging to the evaluator. Respondents often assume that their own traits and preferences will be more common in a population than what is actually the case. This bias is called the false consensus effect. The present study combines the externally triggered pro-male bias with the internally triggered false consensus effect to investigate the evaluation of a fictive stimulus person. The Cognitive Style Index was completed by 186 employees, 65 women and 121 men, at the Norwegian Ministry of Defence. The respondents were asked to judge the perceived rationality of a fictive stimulus decision made in the workplace. In half of the administered questionnaires the stimulus person bore a female name, in the other half the stimulus person was male. In the present study, no pro-male bias was found. The respondents judged the cognitive style of the stimulus person to be similar to their own cognitive style, suggesting a false consensus effect. Earlier studies have found men to be more prone to the use of heuristics. In the present study the false consensus effect was found for the female respondents in the sample only. This surprising result is discussed against the backdrop of motivational explanations of the false consensus effect.

Introduction

People like to think that their evaluations of others are rational and objective, based on the available information. This is not always the case (Hastie & Dawes, 2001). When making evaluations people often rely on biases and heuristics. Biases and heuristics can also be described as rules of thumb, or mental shortcuts. Biases and heuristics lead people to disregard some of the available information, and substitute information that is not relevant to the evaluation in question (Stanovich, 1996). Biases and heuristics are often useful and adaptive mechanisms. They allow us to make quicker judgements and evaluations that usually are accurate enough for their use (Plous, 1993). When judging colleagues in an occupational setting, however, these heuristics and biases might lead selection personnel and other employees to systematically judge certain individuals or subgroups in an unfair manner. In a modern Western work environment that strives to provide equal career opportunities, it is of interest to examine to which extent the evaluations that are made are fair, or whether biases cause systematical disadvantages for certain groups of employees (Heilman, 2001).

One of the common biases in evaluations is the pro-male evaluation bias. This bias leads respondents to judge the performance of a male stimulus person more favourably than the identical performance of a female stimulus person (Goldberg, 1968). Respondents have been shown to evaluate male stimulus persons as more competent, professional and rational than women (e.g. Goldberg, 1968; Paludi & Bauer, 1983; Taynor & Deaux, 1975). In similar studies, the performances of men were more generously rewarded than the performances of women (Feather, 1975; Feather & Simon, 1975). When women succeed, their success is to a greater degree attributed to luck and not to skills (Ethaugh & Brown, 1975). Studies have also shown that women were evaluated as less rational than men (Taynor & Deaux, 1975). This bias seems to be present in both men and women, but in most cases men display a stronger pro-male bias than women (Paludi & Bauer, 1983).

The pro-male bias is an externally triggered bias, as it is triggered by characteristics belonging to the stimulus person. In the case of the pro-male bias, heuristic cognitive processes cause the gender of the stimulus person to distort evaluations. However, evaluations are not only distorted by externally triggered heuristics. Some biases are also internally triggered, irrelevant of actual characteristics in the stimulus person. The false consensus effect is one such internally triggered bias. The false consensus effect, or consensus bias, is a bias that leads people to assume that an artificially high percentage of the population shares their views and traits (Ross, Greene & House, 1976). When people's judgements are affected by the false consensus bias they overestimate the commonness of their own preferences,

behaviours, attributes, values and opinions in a population (Mullen et al., 1985). When evaluating another person, people assume that this other person will share their views and preferences, and this assumption distorts the evaluation.

The bulk of the research on the pro-male bias dates back to before the 1990's. In our modern society we strive to achieve equal work opportunities for men and women and pride ourselves that prejudice is decreasing. It is therefore of interest to examine whether these gender stereotypes still exist, several years after most of the research on the pro-male bias was conducted.

To my knowledge, no research has been done on whether the gender of the respondent affects the strength of the false consensus effect, as there is no tradition for systematically including gender as a moderator in studies of the false consensus effect. However, men have been shown to make more frequent use of heuristic thinking than women (Benyamini, Leventhal & Leventhal, 2000; Gilligan, 1982; Lenney, Gold & Browning, 1983; Poole, 1977). These findings lend support to the theory of the selectivity model, as the selectivity model states that men are more prone than women to focus on the big picture and employ heuristic thinking in decision making (Meyers-Levy, 1989; Meyers-Levy & Maheswaran, 1991; Meyers-Levy & Sternthal, 1991). As the false consensus effect is a form of heuristic thinking, and gender influences the strength of heuristic thinking, the present study investigated whether the gender of the respondents affected the strength of the false consensus effect as well.

In the present study I therefore assumed that the respondents would display a pro-male bias and a false consensus effect in their evaluations. I also assumed that these two effects would be moderated by the gender of the respondent, and that the effects would be stronger for the men in the sample. The present study approximately replicates designs used in the research done on the pro-male bias in the 70s and 80s (e.g. Taynor & Deaux, 1975). The respondents were presented with a stimulus scenario and asked to evaluate the perceived rationality of the described stimulus person. In half of the stimulus scenarios the stimulus person bore a female name, the other half of the respondents were presented with a male stimulus person. Apart from the difference in the gender of the stimulus persons, the stimulus scenarios were identical. I also investigated the respondent's own preference for rationality in decision making, in order to test for a false consensus effect for preference of rationality.

Based on the investigated prior research, the present study sought to make three main contributions to this field of research. One was to investigate whether the pro-male bias still existed in today's work life. The second was to investigate whether the gender of the

respondent would affect the strength of the false consensus effect, as this to my knowledge has not been examined in earlier research. Thirdly, I set out to investigate how the externally triggered pro-male bias and the internally triggered false consensus effect together explained the respondent's evaluation of a stimulus person. This would provide a unique opportunity to investigate how these biases of different origin and nature interact in affecting the respondents' evaluation of the stimulus person. This study thus combines two well documented concepts that have been shown to affect evaluations that have been extensively researched separately. These two biases belong to two different traditions within the psychology of judgement and decision making. It is however of interest to see how they may explain different aspects of the same evaluation. The present study has therefore examined the following model (see Figure 1):

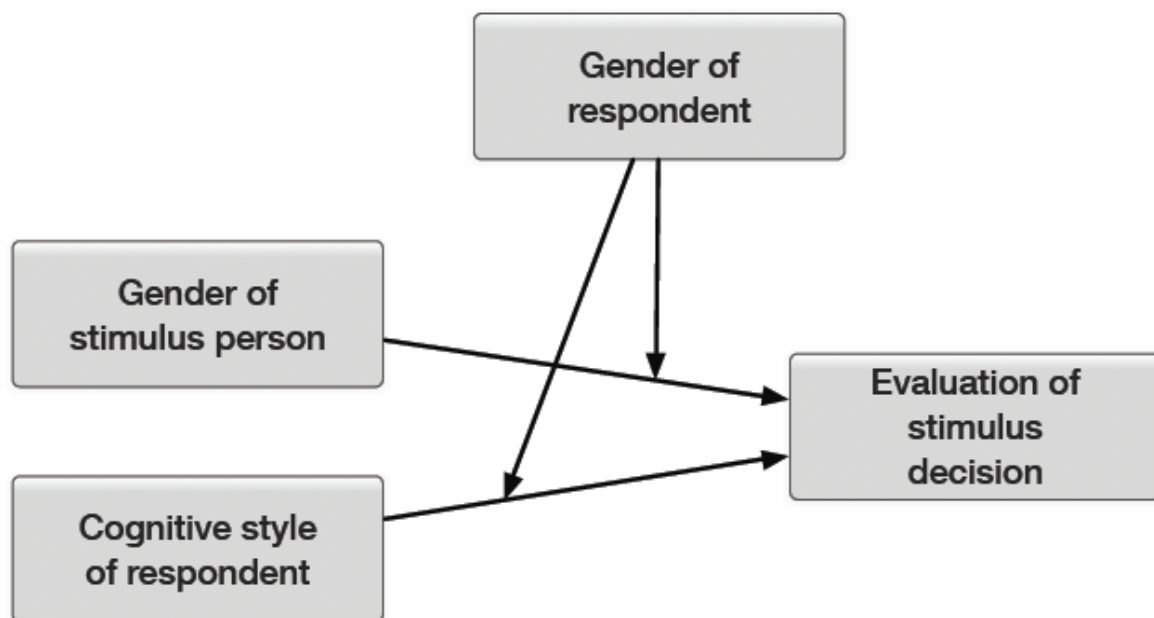


Figure 1

Model investigated in the present study

Pro-male bias and false consensus bias in evaluations of others

Pro-male evaluation bias

Even though most actors in the Western labour market strive to provide equal career opportunities for everybody regardless of gender, there are fewer women than men in top leadership positions (Albrecht, Björklund & Vroman, 2003; Bagues & Esteve-Volart, 2010). A common paradigm in gender stereotype research suggests that one reason for this lies in an evaluation bias towards women. When respondents are presented with a fictive stimulus scenario or situation with either a male or female stimulus person, they display a pro-male bias in evaluation of the stimulus performance. Goldberg (1968) presented female participants in an experiment with one out of two booklets containing a set of articles. In half of the booklets the author bore a female name, and in the other half the author was presented with a male name. The female respondents evaluated the male authors as more professionally competent and as better writers, both for articles written within the domain of typically male and typically female professions.

Mischel's 1974 replication of the Goldberg experiment used a sample containing men as well as women. Men were found to display the same pro-male bias, but neither male nor female respondents displayed a pro-male bias when evaluating articles written on predominantly female professional areas. In a study by Kaschak (1978) the respondents evaluated a description of the teaching methods of fictive stimulus professors. A pro-male bias was found, both on predominantly male and female professional areas, in line with the original study by Goldberg (1968) and contradictory to the Mischel study (1974).

Similar experiments show that this bias holds true for the evaluation of other types of performance as well. Respondents judged an artist's painting more favourably if the artist was male (Pheterson, Kiesler & Goldberg, 1971). This bias extends to the attribution of causes for success and failures. Men's success and women's failures are attributed to stable factors like skill and ability, or lack thereof. Women's success and men's failures are to a larger extent attributed to more unstable factors, such as effort or luck (Ethaugh & Brown, 1975). Women also display a tendency to attribute their own successes externally, and their own failures internally to a greater degree than men (Feather, 1969). Ethaugh & Brown (1975) have suggested that this may be because the success of a woman in a predominantly male situation is an unexpected outcome. Unexpected outcomes are more often attributed to external causes, whereas anticipated outcomes more often are attributed to stable, internal causes (Weiner et al., 1971).

There has been little evidence to support a corresponding pro-female evaluation bias when evaluating performances in predominantly female settings. Men are usually evaluated more favourably also in these cases, and their success is attributed to stable, internal causes (Deaux & Emswiller, 1974). Participants in experiments also tend to punish the failures of women stronger, and reward the success of men more (Feather, 1975; Feather & Simon, 1975). This pro-male bias seems universal, but the strength of this bias is affected by several variables.

When is the pro-male bias stronger? Pro-male bias in the workplace and on work related tasks are especially prominent in work situations which evoke sex role stereotypes (Guttek & Stevens, 1977) and when candidates are being evaluated in typically male situations, professions and positions (Holter, 1971; Levinson, 1975). Some studies have shown a consistent bias for all types of positions, while other studies show a stereotype effect only for gender specific professions (Cohen & Bunker, 1975). People exhibit a stronger pro-male evaluation bias in situations when the stimulus situation to be evaluated is future potential and qualifications, and when making causal attributions (Nieva & Guttek, 1980). Pro-male bias also appeared to increase in judgements that were based on ambiguous and diffuse performance criteria (Deaux & Emswiller, 1974; Rosen & Jerdee, 1974; Terborg & Ilgen, 1975).

Some studies have suggested that the pro-male bias is diminished or eliminated when the stimulus person has already been declared competent or better than the other candidates (Pheterson, Kiesler & Goldberg, 1971). Other studies have found that the declaration of competence in the stimulus person did not affect the pro-male bias (Deaux & Taynor, 1973; Kascak, 1978). A number of studies have indicated that the pro-male bias actually increases in strength when the candidates to be evaluated are high performers, high performers meaning candidates who perform above average in situations where much is demanded. Women are underestimated to a greater degree compared to equally competent men when the stimulus candidate performed a task exceedingly well, than when the stimulus candidates were low performers (Haefner, 1977). Pro-male bias also appears more resilient when evaluating candidates for or in a demanding position that requires managerial skills and decisive, aggressive behaviour (Rosen & Jerdee, 1974). This might help explain why women are scarcer in higher, managerial positions. The pro-male bias can be overcome when the women are forceful and aggressively assert their rights. Underpaid women that did not make strong demands were rewarded less than equally competent men. However, when they displayed

strong demands for pay increase, the women received larger pay increases than men (Freedman, 1997).

Contrasting findings. Some studies, however, have indicated a reverse effect of gender on competency ratings. Abramson et al. (1977) found that women performing well in male specific professions were viewed as more competent than males with the same performance in the same situation. Similarly, Taynor and Deaux (1973) found that women performing in masculine situations were perceived as being subjected to involuntary constraints and that the performance from a woman was more deserving of a reward than the same performance from a man. Jacobson and Effertz (1974) reported similar findings in leader performance evaluation. This pro-female bias is only present in situations when the stimulus person can be described as a high-performer, that is performs above the expected level (Bigoness, 1976).

One way of explaining these results is that when the performed task is not typically female, the woman has had to work much harder than the man to achieve the same results. When the woman is subjected to a task that is not typically female, what is assumed by the respondents to be her natural preferences are perceived to act as involuntary constraints in the situation (Taynor & Deaux, 1973). Studies have shown that this explanation only holds true when the female stimulus person was temporarily out of role, and not when she was permanently and voluntarily acting out of gender role (Taynor & Deux, 1975). The other, perhaps less flattering, explanation has been dubbed ‘the walking dog phenomenon’, or more recently, ‘the talking platypus phenomenon’ (Abrahamson, Goldberg, Greenberg & Abrahamson, 1978). This theory suggests that we are so surprised to find a woman performing a male task at all, that we are less concerned about how well she performs it. Abrahamson et al. (1978) pointed out: when you find a talking platypus, it matters very little what the platypus says, or how well it says it. The true wonder is that the platypus is able to talk at all.

This pro-female bias may further be explained in the light of equity theory (Heider, 1958). When a woman is working under involuntary constraints and achieves the same as a man, her effort has to be greater than that of the man. When her effort is greater, she is more worthy of a reward. The contribution that qualifies the woman for a greater reward than the man is however only a result of a temporary effort, and not a result of stable internal traits (Deux & Emswiller, 1974). Thus, even in situations where we find a pro-female bias, this will not transfer onto expectations of keeping up the good performance in the future. While the

pro-male bias is an effect that affects evaluations over time and across situations, the pro-female bias only arises under particular circumstances, and is only a temporary effect for the situation in question.

Occupational implications. Stereotypes affecting the evaluation of performance have also been found in the workplace and on work related tasks (Rosen et al., 1975). Such biases manifest in selection and hiring processes (e.g. Rosen & Jerdee, 1974; Shae, 1975). When women called to enquire about vacant male-dominated positions they were dismissed and rejected more often than when men made identical enquiries. These manifestations of gender bias concern both men and women applying for sex-inappropriate positions (Levinson, 1974). Both men and women prefer to work with male colleagues (Haefner, 1977) and are especially averse to co-operating with highly competent women (Hagen & Kahn, 1975). Studies have shown that respondents assumed that men would be happier about success and more upset about failure than their female co-workers in stereotypically male professions (Feather, 1975).

Such a gender bias in work settings may be part of the reason why women are not promoted to higher positions as often as men (Morrison, White & van Velsor, 1987). The pro-male bias might be a contributing cause of women being discriminated against in personnel decisions involving hiring, promotion, development and supervision (Gutek & Stevens, 1977; Rosen & Jerdee, 1974). Experiments have shown that women were more seldom considered for positions that require late hours and a lot of travel than equally competent men, and that men were not expected to sacrifice their careers for family duties to the same degree as women (Rosen et al., 1975). A possible explanation for this discrimination of women in hiring and promoting situations might be that people responsible for hiring candidates are punished harder for hiring misfits than they are rewarded for hiring good candidates (Webster, 1964). This might motivate them to focus on looking for possible negative traits in a candidate, and as being female is often considered a liability at work, women might suffer in the hiring process (Shaw, 1972).

In some studies women were hired just as often as men were, but not promoted to the same extent. A study by Cohen and Bunker (1975) found that women were discriminated against only on evaluations for managerial positions. Similar studies support these findings. Females are often hired at a lower level in the organization, but are not able to climb the corporate ladder through promotions to higher positions (Bigoness, 1976). This might be the result of women actually being less willing to sacrifice spare time and family life for a career. Another possible explanation is that the pro-male bias is stronger in situations with high

performers and highly competent candidates (Haefner, 1977). This might help explain why in some studies there was an equal gender distribution among the employees on the lower levels of management, but women were scarcer than men in upper level management positions. Cohen and Bunker (1975) report in a study that employees at the lower management level consisted of 51 % men and 49 % women. 61 % of the men were, however, employed in professional and managerial occupations, while only 32 % of the female white-collar workers were employed in similar positions. Competent women were evaluated as less desirable than men in a selection setting, and may not be able to advance to the same organizational level as their male colleagues whose performance is no better than theirs (Hagen & Kahn, 1975; Heilman, 2001).

The research rather solidly supports the existence of a pro-male bias on a multitude of different evaluation situations, including in occupational settings. The pro-male bias does not only exist on evaluations of competence, but on evaluations other traits as well. One of the areas where people have displayed a pro-male bias is in evaluations of rationality. A study by Taynor and Deaux (1975) showed that in a description of an emergency scenario, 'Linda' was viewed as acting in a less logical manner than 'Larry'. Very few of the studies on the false consensus effect can however be called recent, and gender stereotypes might have diminished and the pro-male evaluation bias might have disappeared since the main body of this research was done. My first hypothesis is therefore as follows:

Hypothesis 1: The gender of the stimulus person affects the respondents' evaluations of the rationality of the actions of a stimulus person.

Replications of the original Goldberg study, and several other experiments, have shown that the gender of the respondent moderates the strength of the pro-male bias. Although a pro-male bias has been found in both men and women, male respondents have been found to display a stronger pro male-bias than women. Men have in example displayed a stronger pro-male bias in evaluations of the professional quality of written work (Paludi & Bauer, 1983) on competence in the work place (Hagen & Kahn, 1975), and on evaluations of rationality (Deaux & Taynor, 1975). My second hypothesis is therefore as follows:

Hypothesis 2: The relationship between the gender of the stimulus person and respondents' evaluations of the rationality of the actions in the stimulus scenario is moderated

by the gender of the respondent. The male respondents show a stronger pro-male bias than the female respondents.

The false consensus bias

The research discussed so far has shown that the gender of the stimulus person affected the respondent's evaluation of a stimulus performance (e.g. Goldberg, 1968). But it is not only characteristics in the stimulus person that affects evaluations. The respondent's own traits, attitudes and opinions have also been shown to affect how respondents evaluate others. Respondents have a tendency to estimate their own beliefs and opinions to be more common than they are and to assume that a disproportionate part of the general population share their views and behaviour. This effect is often called the false consensus effect or consensus bias (e.g. Ross et al., 1976). This tendency to overestimate the prevalence of one's own preferences has been found in the evaluation of the opinions, preferences, attributes and behaviour of others (e.g., Brown, 1982; Dawes, McTavish & Shaklee, 1977; Goethals, Allison & Frost, 1979; Hansen & Donoghue, 1977; Kulik & Taylor, 1980; Manstead, 1982; Nisbett & Kunda, 1985; van der Plight, 1984). The false consensus effect has been found in several mundane preferences. For example, people who preferred ham sandwiches to egg sandwiches assumed that most people would share their preference in this matter (Gilovich, Jennings & Jennings, 1983).

The false consensus effect has also been found in evaluations of political and religious views. Respondents have assumed others would agree with them in their opinions on women's liberations and rights (Sanders & Mullen, 1983) and on their frequency of attending religious services (Ross, Lepper, Strack & Steinmetz, 1977). A study by Ross et al. (1976) indicates that this consensus bias also holds true for personal traits and attributes. Participants were asked to describe in what degree they saw themselves as possessing different traits, views, characteristics, preferences and habits. They were also asked to estimate the percentage of other college students that possessed the same qualities. The results from the Ross et al. study suggested that the respondents tended to see themselves in others, and to judge the traits and dispositions of others to be similar to their own traits and disposition.

A meta-analysis by Mullen et al. (1985) found support for the false consensus effect across 115 different studies. These studies have shown a false consensus effect in the evaluation of common day-to-day preferences, personality and cognitive traits, as well as fundamental values and philosophies of life. A false consensus bias has also been found in strategic preferences. Research has been done on interaction in situations similar to the

prisoner's dilemma (Selten & Ockenfels, 1996). These interaction situations have presented the respondents with a dilemma, where they have to choose whether to cooperate with other participants, or whether to prioritise to secure their own gain. Participants that were themselves willing to cooperate assumed that most other participants would also choose the cooperation strategy (Dawes, McTavish & Shaklee, 1977; Kelley & Stahelski, 1970).

The false consensus effect is, however, relative and can be reduced and eliminated in the presence of certain moderation factors. Some studies have found that the false consensus effect nearly disappeared when the respondents were presented with statistical information or offered monetary incentives for accurate estimates (Engelmann & Strobel, 2001). In some cases the consensus of a sample group overrides the self-based consensus, especially in situations when the respondents are asked to estimate the commonness of behaviour, and not the commonness of attributions (Kulik & Taylor, 1979). The false consensus effect is also stronger when evaluating ambiguous traits that are not well defined and that can describe a number of different behaviours (Dunning et al., 1989). The false consensus effect is also weakened when the respondents hold extreme views and have very untraditional preferences. People who pursue extreme activities, such as mountain climbing, will be aware that this behaviour is due to a special preference of theirs, and not due to a general external factor that affects all people. There will still be a false consensus effect present, but this will be weaker than what is found for more mundane preferences (Ross et al., 1976).

Theoretical explanations for the false sense of consensus bias. The false consensus effect is often explained as either a cognitive heuristic bias, or as a motivational bias. According to the cognitive heuristics explanation the consensus bias is a result of the respondents relying too much on their own knowledge when estimating the prevalence of attributes or attitudes in a population (Krueger & Clement, 1994). When respondents envision how somebody will react in a hypothetical situation, or how someone will answer a hypothetical question, they inadvertently start by asking themselves how they would have reacted or answered. This initial response to the situation and question acts as a cognitive anchor. A cognitive anchor is a cognitive bias that describes a tendency to rely too heavily, or 'anchor' on one trait or piece of information when making decisions. In the case of the false consensus effect, the respondent's own preferences or response becomes an anchor that in turn affects their future estimates of the answers of others, as well as how they perceive other's actions (Kahneman & Tversky, 1973). The respondents own preferences and traits is the first top-of-mind reaction to the stimulus question or scenario, and the primacy effect of

this initial thought affects later estimates of the commonness of the trait or preference to be judged in the population (Zajonc, 1980). This effect is further strengthened by the fact that people often choose to surround themselves with people who are like them and who agree with them. People are therefore selectively exposed to a population that shares their beliefs and attributes (Bersheid & Walsted, 1978). People are also prone to attribute their own actions to external factors that they cannot control, and not as much to personality traits, than what they do when evaluating the behaviour of others (Heider, 1958). This tendency can lead the respondents to assume that others will be under the influence of the same external factors as themselves, and therefore will act in the same way. These cognitive explanations of the false consensus effect explain the effect as a controlled, but biased, way of treating information (Krueger & Clement, 1994). In most cases this heuristic will allow respondents to quickly estimate the prevalence of a trait in a population with relative accuracy. Even though the bias is not statistically appropriate, it mimics normative inductive reasoning (Dawes, 1989). This heuristic often results in biased estimations, but is a sensible trade off when speed is more important than accuracy.

The other explanation of the false consensus bias is a motivational one. Respondents are motivated to assume that a population will be similar to themselves, and as a result feel that they are normal and fit in. Such a consensus bias will be functional for us, as it will boost our sense of social support, confirm our wish to perceive ourselves as normal, and maintain our self-esteem and cognitive balance (Marks & Miller, 1987). Heider (1958) has discussed the possibility that if we perceive our own reactions and judgements to be 'logical' or as holding positive properties, this expectation of similarity between our own judgements and the judgements of others will be even stronger. The false consensus bias may thus be motivated by a wish to experience a sense of social support (Goetals et al., 1979; Sherman et al., 1983).

A meta-analysis by Mullen et al. (1984) found that the false consensus effect overall did not diminish when the respondents were presented with the actual consensus in the group or population. This seems to support the cognitive heuristics explanations more than the motivational explanation. The false consensus effect is closely related in nature to the base rate fallacy effect. The base rate fallacy is a tendency to ignore base rate information when making estimations of likelihood and probability of different outcomes (Nisbett, Borgida, Crandall & Reed, 1976). The base rate fallacy is generally viewed as a cognitive and perceptual phenomenon, and not as a motivational strategy in self-presentation, which lends support to the cognitive heuristics explanation. The false consensus effect is stronger for the

evaluation of very personal and important values. This might suggest that when estimating the prevalence of such values in a population we consider the available population cues more carefully, an indication that cognitive heuristic explanations might be more appropriate (Mullen et al., 1984). However, Marks and Miller's meta-study (1987) indicated that the motivational explanation of the false consensus effect is more appropriate in evaluations of unfamiliar situations and objects. When the respondents evaluated traits in performances that they were very familiar with, and when they considered themselves to be part of the group in which they were to evaluate the prevalence of a trait, the cognitive factors affecting the false consensus effect provided a more suitable explanation. The fact that the motivational explanations for the false consensus effect are more suitable when evaluating a person belonging to an out-group or an unfamiliar trait or action might at first seem counter intuitive. One might assume that the motivation to feel similar to the stimulus person would be stronger if one considered the stimulus person to belong to one's own group. These results might be explained by that when evaluating an in-group member on familiar traits, one is to a larger degree exposed to a selective sample and the personal anchor is stronger.

According to prior research on the false consensus effect, an evaluation of a stimulus person's rationality should be affected by the rationality of the respondent. Such a preference for rational decision making strategies in the respondents can be described as cognitive style.

Cognitive style

Cognitive style is a theoretical concept that refers to a manner of thinking, and a preferred way of organising and processing information (Messick, 1976). It has been conceptualized both as a trait, and as personal preferences among steps and other aspects of mental functioning (Guilford, 1980). According to Riding and Cheema (1991), cognitive style is an attribute that is something in between an aptitude and a personality trait. In most definitions cognitive style involves both the gathering and processing of information (Blaylock & Rees, 1984).

Cognitive styles are not to be confused with ability. Cognitive abilities describe how well a task is performed, while cognitive style explains in which manner the task is carried out (Guilford, 1980). The concept of cognitive abilities is value directional. The higher abilities, the better. In the case of cognitive style, this is more a matter of different preference on information gathering and processing. One cognitive style cannot be said to be qualitatively better than another (Messick, 1984). It is more a question of the manner of performance than the level of performance (Messick, 1976).

Cognitive style affects the way people make decisions. People with a stable preference for intuitive decision making are faster decision makers and rely more on implicit knowledge (Chodorow, 1974; Woolhouse & Bayne, 2000). Analytical decision makers make more normative correct decisions than intuitive decision makers (Pacini & Epstein, 1999). This implies the idea of task-style fit. One cognitive style might in some cases be better suited to certain tasks and decisions, while another style might be more suitable and appropriate for other people or in other situations. Two very different cognitive styles can also, in some cases, lead to the same results (Betsch & Kunz, 2008). There has been some debate as to whether the concept is unidimensional or contains several dimensions. There are therefore several different theoretical and operational definitions of the term, and some confusion and controversy in the area. The next section will therefore describe different theories on the content of the construct cognitive style, focusing on dimensions that all the theories have in common.

In one of the earliest scientific conceptualisations of cognitive style Jung (1970) suggested that there were differences in the ways in which we both percept and judge the world around us. According to Jung's definition of cognitive style, people percept the world by either sensing or using our intuition. They then make judgements based on their perceptions by either thinking or feeling. Other earlier theories have conceptualized cognitive style as a preference for field dependence or field independence. Field independence is described as the ability to and preference for distinguishing objects from their surroundings. People who are low in field independence operate with broad, composite concepts, and do not focus on the details of each sub-concept. Their thinking and cognitive functioning is more holistic and global. People who are high in field independence analyze all information separately and detailed, and are less focused on the big picture (Witkin, 1965, 1976). Another way of conceptualizing cognitive style has been complexity versus simplicity, a tendency to or a preference for sorting information into fewer or more separate categories (Guilford, 1980; Kelly, 1955). Other theories focus on the degree to which the attention is captured and held by specific points, focusing versus scanning (Woodrow, 1939), or a preference for differential or diffuse use of information (Wachtel, 1968).

What these theories have in common is a focus on the preference for holistically and globally scanning the situation to get an intuitive overview and make top-down evaluations, or for analyzing each aspect of the situation in detail in order to make bottom-up evaluations (Van den Broeck et al, 2003). Today cognitive style is often understood as a unidimensional, bipolar concept. Some researchers claim to have identified as many as 29 separate cognitive

styles. Factor analyses suggest more than one dimension, but as the number of dimensions increases, so does the difficulty of valid and reliable measurement (Allinson & Hayes, 1996).

Cognitive style has been found to be a useful concept in many aspects of the work place. It appears to act as a moderating variable in explaining work performance (Kirton & McCarthy, 1988). Similarity or differences in cognitive style affect interaction between colleagues, and knowledge about the cognitive style of colleagues increases understanding and tolerance in the work place (Talbot, 1989). Hayes and Allinson (1994) have suggested the concept's usefulness in areas such as selection, performance, placement, leadership and teamwork. When people chose jobs that provided good fit with their cognitive style, they found the job more rewarding (Streufert & Nogami, 1989), and colleagues that have knowledge of each other's cognitive styles appear to work better together and respect each other's differences (Edgley, 1992). Women are stereotypically viewed as more emotional and less analytical than men (Taynor & Deaux, 1975). However, tests of cognitive style suggest that this is not the case. Studies have in most cases produced significant results indicating that the style of cognitive women is more rational than that of men (Allinson & Hayes, 1996).

As argued above, the false consensus effect leads respondents to assume that their own traits and preferences are more common in a population than alternative preferences. Respondents also assume that a stimulus person will be, act and think similarly to them. In the present study, I therefore hypothesised that the respondents would assume that the cognitive style of the respondent would be similar to their own. My third hypothesis is therefore as follows:

Hypothesis 3: The cognitive style of the respondent affects the evaluation of the perceived rationality of the stimulus person. Respondents with an analytical cognitive style perceive the stimulus person as more rational.

To my knowledge, no research has yet investigated if there are gender differences in the false consensus effect. The selectivity model however suggests that men and women select different cues and pieces of information from their surroundings when making a judgement or an evaluation. The theory implies that men are in general more likely to look at the overall message, while women are more prone to elaborate detailed when evaluating a situation or message (Meyers-Levy, 1989; Meyers-Levy & Maheswaran, 1991; Meyers-Levy & Sternthal, 1991). The selectivity model states that these differences have both biological and social explanations. Studies have suggested that differences in sex chromosomes, sex

hormones and brain lateralization may account for some of these differences. Such possible biological differences are further strengthened as men and women are treated different by society. Careful consideration is encouraged in women more than in men, in line with stereotypical views on gender differences (Putrevu, 2001). The selectivity model is supported by several studies that have showed that men are more prone than women to make use of heuristics in their evaluations (Benyamini et al., 2000; Gilligan, 1982; Lenney et al., 1983; Poole, 1977). My fourth and last hypothesis is therefore as follows:

Hypothesis 4: The relationship between cognitive style of the respondent and the evaluation of the perceived rationality of the stimulus person is moderated by the gender of the respondent. The false consensus effect is stronger for the men in the sample.

Method

Organizational context

The data was collected among the employees at the Norwegian Ministry of Defence. The Ministry of Defence is a Government Office whose main responsibilities consist of the formation and implementation of Norwegian security and defence policy. The employees at the Ministry of Defence are both women and men, from both military and civilian professional backgrounds and different levels of leadership. The questionnaire was sent out to all the employees at the Ministry. The Ministry of Defence supported this research project and were helpful in the acquisition of a research sample, as a part of a greater effort to review practices involving the role of gender within different areas of their domain and activities. The Ministry of Defence is a good environment for a study concerning gender biases and cognitive style. Due to its close connection to the Norwegian Armed Forces it has traditionally been a male dominated work place. Rationality is often viewed as a masculine trait (Taynor & Deaux, 1975) and is highly valued within the Norwegian Armed Forces. A military background is often intuitively associated with a rational cognitive style and pro-male bias. The professional background of the subjects has therefore been included as a control variable in the present study.

Sample

The sample consisted of 186 respondents, 121 men and 65 women. The questionnaire was sent to all 314 employees at the Norwegian Ministry of Defence, at all levels of management and with both civilian and military background, yielding a response rate of 59 %. Out of the total 186 respondents, 112 reported having a primarily non-military background (60.2 %), 58 of these were men and 54 women. Seventy-four respondents reported a primarily military background (39.8 %), 63 of these were men and 11 women (see table 1).

Procedure

An online questionnaire was sent to 314 employees at the Ministry of Defence. All the respondents answered the complete 38 item version of the Cognitive Style Index (Allinson and Hayes, 1996) and provided their gender and their professional background. The respondents were also presented with a scenario, describing a dilemma at the workplace. They were asked to evaluate the rationality of the course of action chosen by the stimulus person in the scenario. Details of the construction of this scenario are presented further down in this

section. Half of the respondents were introduced to the scenario with a male decision maker (version A). The other half was presented with version B of the fictive decision, with a female decision maker. The fictive decision versions A and B were identical, except for the gender of the decision maker. Ninety-four responded to version A of the questionnaire, with a male decision maker, 64 of these men and 30 of them women. Ninety-two responded to version B of the questionnaire with a female decision maker, 57 of these men and 35 of them women.

Measures

Cognitive Style. Many tests of cognitive style concentrate on the dimension field dependency versus field independency, in line with the analytic versus holistic approach (e.g. Oltman, 1968; Witkin et. al., 1962; Witkin et al., 1971). These tests are, however, cumbersome and time consuming to administer, and require great skill in administration and interpretation (Halpern, 2000). It has been argued that some of these tests measure cognitive ability, rather than cognitive style (Schweiger, 1983).

For the purpose of this study, I chose to measure cognitive style as a measure of analytical rationality versus emotional intuition, measured on the Cognitive Style Index (CSI) (Allinson & Hayes, 1996). The CSI measures a bipolar, unidimensional construct of analytical versus intuitive cognitive style. This construct is in line with previous theoretical understanding of the concept cognitive style (e.g. Van den Broeck et al, 2003) The CSI is a rather new measurement, but it shows promising validity and reliability. It consists of 38 items, asking the respondents to rate to which extent they agree or disagree with statements about their decision making preferences. The following is an example item from the CSI-scale: *“I am inclined to scan through reports rather than read them in detail”*. The response format is trichotome (agree, don’t agree, don’t know). For statements describing a preference for an analytical cognitive style, the option ‘agree’ was scored 2 and ‘don’t agree’ was scored 0. For statements describing a preference for an intuitive cognitive style, the option ‘agree’ was scored 0 and ‘don’t agree’ was scored 2. The option ‘don’t know’ was always scored 1. The results are given on a scale from 0 (very intuitive) to 76 (very analytical). The responses on the CSI-scale in my study yielded a Cronbach’s alpha of .82. The items were translated to Norwegian for the purpose of this study by means of a translation – back translation process.

Evaluation of stimulus scenario. The respondents were presented with a scenario (see appendix A) that described a fictive decision maker in a dilemma at work, and his/her reaction to the dilemma. I wrote this scenario based on similar scenarios presented in earlier

research on the pro-male evaluation bias. An especially helpful example was the scenario used in the study by Taynor and Deaux (1975), where the female stimulus person was evaluated by the respondents as acting less rationally than the corresponding male stimulus person. I took care to make the situation described and the reactions of the stimulus person as ambiguous as possible, as this is a necessity for producing a pro-male bias (e.g. Deaux & Emswiller, 1974). I also intentionally wrote the scenario to take place in an area of work that would not be immediately related to the everyday work life of my respondents, thus minimising the possibility that prior knowledge of similar situations would affect the evaluation. Apart from this, however, I did not include any of the other moderating variables that have been shown to increase the pro-male bias. The profession of the stimulus person or the situation was chosen as not to invoke sex role stereotypes (Gutek & Stevens, 1977). The respondents were asked to evaluate a clearly fictive performance (Ross et al., 1976) that had already taken place. They were in other words not asked to evaluate future potential and qualifications, or make casual attributions (Nieva & Gutek, 1980). If the scenario had been written to include the circumstances mentioned above, the chances of the study to produce a significant pro-male bias would have been higher. I intentionally chose not to include these moderating variables in the stimulus scenario used in the present study, as I wanted to isolate the pro-male bias in the most basic form, uninfluenced by moderating variables.

Respondents were asked to rate the perceived rationality of the fictive decision on a 7-point Likert scale of 5 items specially created for this study, where 1 indicated 'very little' and 7 indicated 'very much'. The scoring of the scale resulted in a score between 5 (very intuitive) and 35 (very analytical). The items from the stimulus scenario were based on the core constructs measured by the CSI, and worded in a similar way as the CSI-items. It was important that the formulation of the items in the scenario was similar to that of the items in the CSI. This was the only way to ensure that a significant relationship between the two measures could be called a false consensus effect, as the false consensus effect describes a tendency in the respondents to assume that others will be similar to themselves on the same trait (Ross et al., 1976). The fact that the two measures were similar did not represent a problem, as the CSI measured the respondents own cognitive style, whereas the items in the stimulus scenario measured how the respondents perceived the cognitive style of the stimulus person (see appendix A). The scale that was used in this study to rate the rationality/emotionality of the fictive decision originally contained 6 items. Item 6 was removed before the analyses in order to improve reliability, because of a negative correlation with the other

items of the scale. The removed item concerned the tendency to follow ones gut feeling in the decision making process. The final 5 item scale had a Cronbach's alpha of .84.

Gender. The gender of the respondent was coded as 1 for female and 0 for male.

The gender of the fictive decision maker. The gender of the fictive decision maker was coded as 1 for female and 0 for male.

Professional background. Professional background was coded as 0 for primarily military and 1 for primarily civilian.

Results

Means, standard deviations and correlations of all variables are shown in Table 1. Results from both scales used in the study proved to possess a satisfying reliability (Table 1).

Table 1
Means, Standard Deviations, Correlations, and Reliabilities

Variable	M	SD	1	2	3	4
1. Scenario evaluation	21.25	6.87	(.84)			
2. CSI	42.73	11.23	.16*	(.82)		
3. Gender in scenario (0=male, 1=female)	.51	.50	-.07	.08		
4. Gender respondent (0=male, 1=female)	.35	.48	-.24***	.07	.06	
5. Professional background (0=military, 1=civilian)	.60	.49	.09	-.11	.03	.34***

Note. Cronbach's alphas in brackets on the diagonal. * $p < .05$. *** $p < .001$.

Before performing the analyses to test my hypotheses the distribution of responses on each scale was considered, and this was found to be approximate to normal distribution. There were no missing values in the dataset. A hierarchical regression analysis was conducted to investigate whether the gender of the fictive decision maker in the scenario and the CSI of the respondents affect the evaluation of the rationality of the stimulus person. I also examined whether any of these two relationships were moderated by the gender of the respondent. The professional background of the respondents was used as a control variable. I tested for multicollinearity, and this was not found to be a problem in this dataset. The results of the hierarchical regression analysis can be viewed in Table 2.

Table 2*Hierarchical Regression Analysis Predicting Evaluation of Scenario*

	Step 1	Step 2	Step 3	Step 4
	β	β	β	β
Control variable				
Professional background	-.09	-.03	-.05	-.05
Main effects				
CSI		.19**	.04	.04
Gender in scenario		-.07	-.07	-.04
Gender of respondent		-.24**	-.24**	-.20*
Interaction terms				
Gender of respondent x CSI			.24**	.24**
Gender of respondent x Gender in scenario				-.05
F	1.57	4.73**	5.28***	4.41***
ΔR^2		.09**	.03**	.00
R^2	.01	.10	.13	.13

* $p < .05$. ** $p < .01$. *** $p < .001$. CSI= Cognitive Style Index

The control variable professional background was not significantly related to the dependent variable.

Hypothesis 1 suggested that there would be a pro-male bias in the evaluations of the stimulus scenario, that a male stimulus person would be evaluated as being more rational than a female stimulus person. As seen in Table 2, the hierarchical linear regression reveals that there was no significant relationship between the gender of the fictive stimulus person and the judgement of the stimulus decision. The data did not support the existence of a pro-male bias, and so Hypothesis 1 was not supported in the present dataset.

Hypothesis 3 predicted a false consensus effect, suggesting that the CSI-score of the respondent would significantly affect the evaluation of the stimulus scenario. The CSI-score of the respondent significantly contributed to the variation in the judgements of the fictive decision. The variables were positively related, as rational respondents evaluated the stimulus person to be more rational, and respondents with an intuitive cognitive style evaluated the

stimulus person to be more emotional. The analysis supported Hypothesis 3, as there seems to be an overall false consensus effect.

Hypothesis 2 stated that the strength of the pro-male bias would be moderated by the gender of the respondent. There was no evidence in the dataset that the gender of the respondent had a moderating effect on the non-significant relationship between the gender of the fictive decision maker and the evaluation of this fictive decision maker's rationality. Hence, Hypothesis 2 was not supported.

Hypothesis 4 predicted that the strength of the false consensus effect would be moderated by the gender of the respondent. The moderator variable gender of respondents had a significant moderating effect on the relationship between cognitive style and the judgement of the stimulus person. Hypothesis 4 is therefore supported (Table 2).

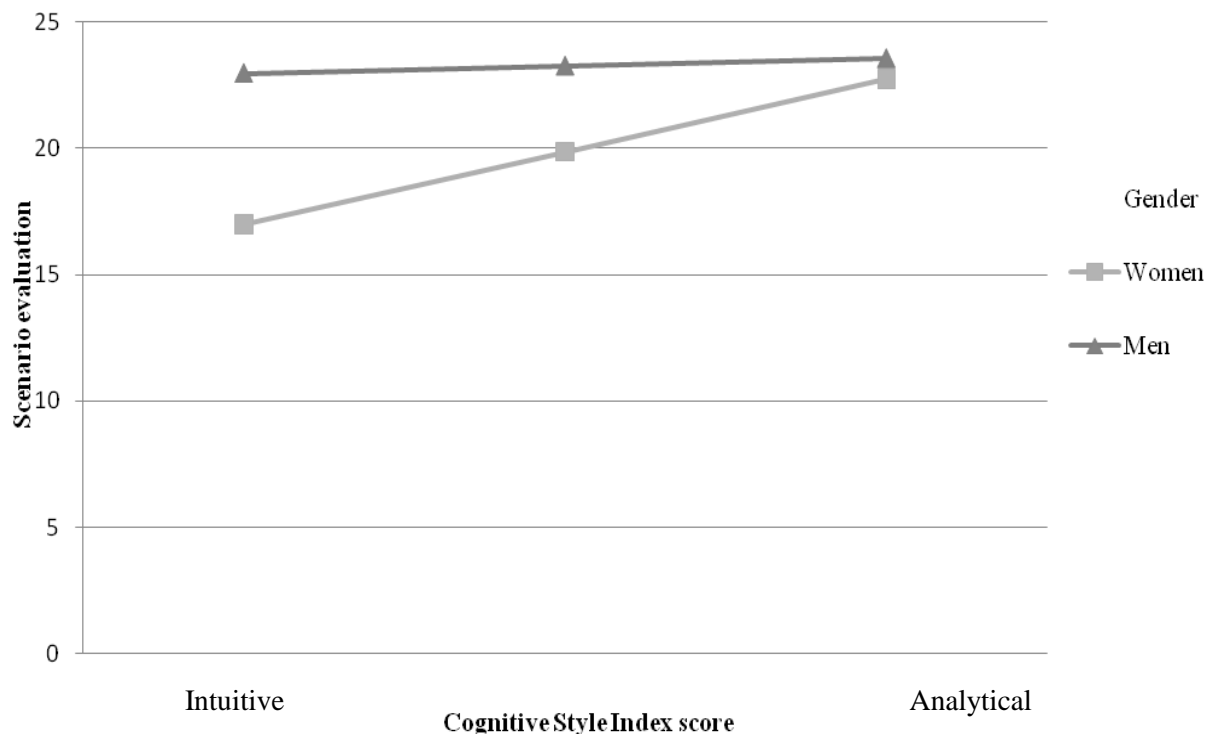


Figure 2

The moderating effect of the gender of the respondent on the relationship between CSI-scores and scenario evaluation.

The significant moderation effect on the relationship between the CSI-score of the respondent and the judgement of the fictive decision maker's decision is visualised in Figure 2. Figure 2 is generated using an online ModGraph generator (Jose, 2008). This moderation

effect means that the gender of the respondent affected the strength of the relationship between the CSI-score of the respondent and the evaluation of the stimulus person. This relationship was significantly stronger for the women in the sample than for the men. A simple slope analysis (Aiken & West, 1991) revealed that the false consensus effect was significant only for the women in the sample (simple slope = .26, $t = 3.6$, $p < .001$) and a nonsignificant slope for males (simple slope = .03, $t = .47$, *n.s.*). Men's evaluation of the stimulus person was not affected by the respondents own CSI-score. Female respondents who scored highly on the CSI-scale, however, tended to perceive the fictive decision maker as more rational than the women with CSI-scores towards the more intuitive end of the scale. This shows that Hypothesis 4 was only partly supported. The gender of the respondent moderated the relationship between the CSI-score of the respondent and the evaluation of the stimulus scenario, but in the opposite direction than anticipated.

Discussion

The purpose of this study was to investigate how the internally triggered false consensus bias and the externally based pro-male bias affect the evaluation of a stimulus person. I initiated this study with the idea that the two biases explained different parts of the variation, and would yield significant separate contributions to the variance in the evaluations of the stimulus scenario. Both of these effects have been documented before, but the research on the pro-male bias is possibly outdated, and there is little research on evaluations of perceived rationality in an occupational setting.

The moderation effect of gender on the pro-male bias is well documented, and was therefore included in the present study. Very little research has investigated the moderating effect on gender on biases like the false consensus effect. Research supporting the selectivity model (Meyers-Levy, 1989; Meyers-Levy & Maheswaran, 1991; Meyers-Levy & Sternthal, 1991) justified the inclusion of gender as a moderating variable in the hypothesis concerning the false consensus effect as well. I therefore hypothesised that there would be a pro-male bias and a false consensus effect in the evaluation of the stimulus person, and that both biases would be stronger for men.

The present study found no evidence for such a pro-male bias, neither for the female nor male respondents. The other two hypotheses predicted that the false consensus effect would lead respondents to judge the stimulus person to have a similar cognitive style to themselves, and that this false consensus effect would be stronger for men. A significant false consensus effect was found for the women in the sample only. As no evidence for a pro male bias was found, it was not possible to investigate the individual contributions of the two biases together. At a general level the most important findings in the present study is the absence of a pro-male bias in the data, and the finding that the false consensus effect was significant only for the female respondents. Gender was indeed a significant moderator in this relationship, but in the opposite direction than hypothesised.

Pro-male bias

No pro-male bias was found in the present study, although this is an effect that has been consistently documented in earlier research (e.g. Goldberg, 1968). The main bulk of the research on the pro-male evaluation bias was done before the 90's. The results in the present study may reflect an actual decrease in pro male bias, as a result of a decrease in gender stereotyping since the previous research was conducted. The Ministry of Defence as a work place has a strong focus on equal rights of women, and this may have further contributed to

the decrease in pro-male evaluation bias. If the pro-male evaluation bias is indeed weaker than when the previous research in the area was conducted, this is a very important finding. These results indicate that women's conditions in all aspects of the work place have improved, and that they are more fairly evaluated today than they were in earlier decades. However, the fact that I did not find support for a pro-male bias in this study might also be a result of the stimulus scenario being worded to exclude most of the variables that usually increase the strength of the pro-male bias. The pro-male bias in evaluation tends to be stronger when the respondent is asked to evaluate a stimulus person performing at a high level (Deaux & Taynor, 1973). Although the scenario used in this study depicts a demanding decision, the fictive decision maker's performance cannot be called very high. Stereotypes also tend to increase in strength when the task being performed is a highly gendered task (Holter, 1971; Levinson, 1975). In this scenario I chose a gender neutral task, and this may have contributed to lower levels of prejudice. The scenario used in this study required a judgement of past behaviour, rather than a prediction of future performance, as would be the case in a selection decision. This may have further decreased the strength of the gender stereotype effect (Nieva & Gutek, 1980). In sum, I designed the scenario to exclude as many of the known moderating variables as possible, in order to isolate the effect of the decision maker's gender. A possible explanation for the absence of a pro-male bias in my study is that these moderating variables act as confounding variables, artificially enlarging the effect of the gender of the fictive decision maker. The fact that this study could not identify any significant results to support a pro-male evaluation bias is therefore not necessarily the result of an actual decrease in gender biases in evaluation, but is perhaps due to methodological issues caused by the wording of the stimulus scenario.

The most obvious interpretation of my results on the pro-male bias is still that this bias simply did not exist in the sample. Such a finding is an important contribution to the developing research on the pro-male bias, as this indicates that which biases we are prone to is not just innate, but is also affected by socialisation and the values of society. If the strength of the influence of biases can change in a population over time, such biases have to be in part the result of environmental factors, and not just a matter of genetically determined predispositions. This is an important point, as biases are often explained as being adaptive (e.g. Gigerenze & Todd, 1999), a term that implies explanations of evolution and natural selection. If the pro-male bias has decreased over time, this serves as an important reminder that some biases are not simply a result of hardwired cognitive patterns people are born with, but also a result of acquired knowledge and learning.

The false consensus effect

Perhaps the most surprising finding in the present study was that the women displayed a stronger false consensus effect than the men in the sample. This result contradicts the preponderance of findings in relation to the selectivity model (Meyers-Levy, 1989; Meyers-Levy & Maheswaran, 1991; Meyers-Levy & Sternthal, 1991). My results are therefore somewhat controversial and require additional explanation. Some light might however be shed on the matter by the distinction between the two different explanations for the false consensus effect. Most of the studies that show higher use of heuristics for men than women include stimulus situations and messages that are highly familiar to the respondents (Graham, Stendardi, Myers & Graham, 2002; Meyers-Levy, 1989; Meyers-Levy & Maheswaran, 1991; Meyers-Levy & Sternthal, 1991). This gender difference in the use of heuristic thinking has been shown to be stronger when the respondents are evaluating a stimulus person who is very similar to themselves (Graham, 1994). In such stimulus situations the cognitive explanations for the false consensus bias would be more appropriate than the motivational explanation (Marks & Miller, 1987).

The stimulus situation in the present study was unfamiliar to the respondents, and the stimulus person did not belong to the respondents' immediate in-group. This would suggest that the motivational explanation for the false consensus effect would be more important in this study than the heuristic factors (Dunning et al., 1989; Marks & Miller, 1987). Any false consensus effect in the present study might therefore be motivated by a need or wish to be similar to others, to feel normal, and to fit into a group.

This need is stronger in females than in males. Women are more likely than men to prioritise close, intimate relationships (Miller, 1986), and are more attuned to the relationships of others (Watkins et al., 1998, 2003). Women report experiencing more empathy than men and to some extent show more empathy when tested in experiments (Batson et al., 1996; Hunt et al., 1990). Women have larger social networks (Antonucci & Akiyama, 1987) and report receiving more social support than men (Burda, Vaux & Schill, 1984; Butler, Giordano & Neren, 1985; Leavy, 1983). Seeing oneself in relation to others, communion has been viewed as a feminine trait (Chodorow, 1974) and studies have shown that women define themselves in relation to others more often (Gilligan, 1982).

A meta-analysis on gender differences has shown that women are more concerned about relationships. Women also acted in ways that would support relationships and that increased the possibility that they would be approved by others (Barnett & Karson, 1989). The research cited above did not explore whether these tendencies are innate characteristics or

skills learned through social expectations. This is not important in the present study; it will suffice to establish that research suggests that group belonging and fitting in is more important to women than men (Miller, 1986). As the design of the present study likely invoked the motivational grounds for the false consensus bias, these gender differences in need for group belonging might offer a partial explanation for the reverse gender moderation effect on the false consensus effect.

The results in the present study are far from fully explained by the motivational explanations of the false consensus effect and gender differences in need for group belonging. I regard my results merely as an indication that there are aspects of the role of gender in the false consensus effect that are not fully understood. Considering the findings from the Marks and Miller meta-study (1987) on the different explanations for the false consensus effect, the difference in motivational and cognitive explanations might play a role in these gender differences.

Limitations and implications for future research

Although my study has produced important findings, I acknowledge several limitations to it. One such limitation is that it is impossible to determine the cause for the absence of a pro-male bias. This finding may be due to an actual lower level of stereotypes in the present sample. It may also be a result of the way the stimulus scenario was designed. As mentioned, I designed my stimulus scenario so that it contained few of the variables that usually increase the pro-male bias. The situation should not have invoked sex role stereotypes (Guttek & Stevens, 1977) and respondents were not asked to evaluate future potential and qualifications, or make casual attributions (Nieva & Guttek, 1980). The stimulus person cannot be called a high performer, as the performance of the stimulus person cannot be said to be especially good or indisputably correct (Deaux & Taynor, 1973). If these moderating variables had been included in the scenario, it might have resulted in a significant pro-male bias effect in the sample. As mentioned, these variables were intentionally excluded from the stimulus scenario in my study, in order to isolate the most basic form of the pro-male bias effect. Although this served a purpose in the study, it made it difficult to ascertain whether the absence of a pro-male bias in the present study is due to an actual decrease in stereotypes or merely the elimination of moderating variables.

I therefore suggest that further research in this area considers different degrees of the presence of moderating variables. It would be of interest to further investigate the independent contribution of the moderating variables in the pro-male bias mentioned above. Each of the

variables known to moderate the strength of the pro-male evaluation bias has been individually documented. It would be useful to include several of these moderators in a study, to evaluate the independent effect of each one. It would also be of interest to investigate whether this lack of pro-male evaluation bias would hold true in other work places as well. The Ministry of Defence is an unconventional work place, and has traditionally been dominated by male and rational values. Further replications of this kind of study would help to determine whether the decrease in pro-male bias in comparison to other studies is due to special circumstances in this particular study or an actual decrease in gender prejudice over time.

Another limitation is this study's inability to fully account for the surprising finding of a significant false consensus effect for the women in the sample only, and not for the men. This moderation effect was in the opposite direction as hypothesised. Although the motivational explanation of the false consensus effect (Dunning et al., 1989; Marks & Miller, 1987) and gender differences in need for group belonging (Miller, 1986) may provide hypotheses for further research, this explanation is far from conclusive. Future research into the false consensus effect should include gender as a moderating variable, and should aim at systematically examining if this moderating effect varies with the nature of the stimulus scenario. If the tendency for women in the present study to display a stronger false consensus effect is indeed due to an invokement of motivational reasons that are stronger in women, this gender difference should not exist in non-western cultures. Gender differences in need for group belonging and the tendency to define oneself by social relationships is a purely western finding (Watkins et al., 1998; Watkins et al., 2003). Cross cultural studies in gender as a moderator of the false consensus effect could give new insight into the role of the motivational explanations for this bias.

In the present study the respondents were asked to simply evaluate a clearly fictive performance made by a stimulus person. This may be a limitation to the study. The false consensus effect has been showed to be stronger when the respondents are either asked to make a choice or perform a task themselves, or when watching what they believe to be an actual person perform a task (Ross et al., 1976). Neither was the case in the present study. Any design that would allow the respondents to perform tasks or watch an actual stimulus person make such a performance would have been far too ambitious for a project of such limited scope. The solution I chose was the most pragmatic choice within the external frames of a master thesis project. Future research might investigate whether other results are found

when the respondents are asked to make choices and actions themselves, as opposed to simply evaluating a fictive stimulus scenario.

My study, as many other studies within this research tradition, only investigated the processing of information. All the background information was already presented to the respondents in the stimulus scenario. This may be a limitation to the study, as heuristics like the pro-male bias and the false consensus effect concern both the acquisition and processing of information (Hastie & Dawes, 2001). More ambitious studies with a more flexible scope might want to investigate the false consensus effect in designs that would allow the respondents to select themselves which information to gather before processing the gathered information.

Some might argue that I should have taken into account the possible presence of a better-than-average effect in the study. When evaluating others, respondents tend to judge their own performance as better than average. This in turn leads to the respondents evaluating the stimulus person somewhat lower on positive traits than on neutral traits. This tendency is called the better-than-average effect, and is a self-preservation bias that contributes to maintaining our self-esteem. This better-than-average effect might lead to an underestimate of the positive traits of others (Alicke, 1985; Dunning et al., 1989). If the scenario in my study had asked the participants to evaluate the quality of the performance, this effect may have led to artificially low estimates. A discussion of the better-than-average should have been included in the study if the traits evaluated in the stimulus scenario were value directional, that is if one score was considered better than another. If the trait to be evaluated had been value directional, the better-than-average effect might have led the evaluation scores on the stimulus scenario to regress somewhat towards the mean. Theoretically cognitive style is not value directional (Messic, 1984). The wording of the questions in the stimulus scenario was not expressively focused on an evaluation of quality. I therefore did not expect there to be a better-than-average effect in this study, and chose to exclude this theoretical aspect from the research design and the general discussion.

Implications for practice

Even though there was no evidence for a pro-male bias in the present study, such a bias may still exist in other situations and work places. The present study has practical implications for selection personnel, as biases may be particularly strong in selection situations. In selection situations one attempts to evaluate how well the candidates will be able to perform in the position in the future if hired. People exhibit a stronger pro-male

evaluation bias and a greater degree of heuristic thinking in situations where the stimulus situation to be evaluated is future potential and qualifications, and when making causal attributions (Nieva & Gutek, 1980). Pro-male bias and heuristic thinking also appears to increase in judgements based on ambiguous and diffuse performance criteria (Deaux & Emswiller, 1974; Rosen & Jerdee, 1974; Terborg & Ilgen, 1975). The false consensus effect is also stronger in cases when evaluating ambiguous traits that can describe a number of behaviours (Dunning et al., 1989). Biases are therefore likely to occur in evaluations in selection processes.

The pro-male bias is likely to present stronger in selection situations recruiting for higher managerial positions. The pro male bias is stronger when evaluating candidates for typically male positions (Levinson, 1974), and when the position is one that requires high performance (Rosen & Jerdee, 1974) and aggressive, stereotypically male behaviour (Haefner, 1977). An example of such a situation where a pro-male bias and the false consensus effect are likely to occur would then be when evaluating candidates for a managerial position. In such selection situations one has to evaluate candidates' future potential on often vaguely defined traits and abilities. This will, to some extent, also be the case in many promotion decisions, with the implication that pro-male biases are more potent in such instances.

This is a point that has implications for practice in selection and promotion purposes. In many cases the people making hiring and promotional decisions are human resources specialists, who are only familiar with their own professional fields and their selection methods. Such selection personnel often lack a thorough understanding of the professional fields relevant for the position they are selecting for. Consequently, if the people making decisions in selection processes are not familiar with the particular content of the position to be filled, this may lead them to have only a diffuse idea of the performance criteria. In such cases their evaluations would be prone to heuristic thinking that may lead to unfair disadvantages for certain groups of applicants. Practical implications would be to make sure a proper job profile is made, describing the exact content of the position to be filled. Such a profile should be made in cooperation with previous employees in the position in question, and in conference with other job experts. The criteria that the candidates are evaluated against should be as objective and explicit as possible. Such efforts would decrease the degree to which cognitive biases affect the selection and promotion evaluations and decisions.

Conclusion

In the present study, the male and the female stimulus person were evaluated as equally rational. This result has important implications for the conditions of women in the work place, as it indicates that these conditions have bettered since the main bulk of the research on the false consensus effect was conducted, before the 1990's. Such a result also has implications for the explanations for and origins of biases and heuristics. If the strength of biases can change over time, such biases must in effect be partly the result of environmental influences and not just innate genetics. In the present study I found a significant false consensus effect for the women in the sample only. This finding is in contrast to earlier research, but may in part be explained by the motivational explanations of the false consensus effect and gender differences in need for group belonging.

Literature

- Abramson, P. E.; Goldberg, P. A.; Greenberg, J. H.; & Abramson, U. M. (1978). The talking platypus phenomenon: Competency ratings as a function of sex and professional status. *Psychology of Women Quarterly*, 2, 114-124.
- Aiken, L. S., & West, S. G. (1991). *Hierarchical regression: Testing and interpreting interactions*. Thousand Oaks, CA: SAGE Publications, Inc.
- Albrecht, J., Björklund, A. & Vroman, S. (2003). Is There a Glass Ceiling in Sweden? *Journal of Labor Economics*, 21, 145-177
- Allison, C.W., & Hayes, J. (1996). The cognitive style index: a measure of intuition – analysis for organizational research. *Journal of Management Studies*, 33, 119-135.
- Antonucci, T. C. & Akiyama, H. (1987). An examination of sex differences in social support among older men and women. *Sex Roles*, 17, 737-749.
- Bagues, M. F. & Esteve-Volart, B. (2010). Can Gender Parity Break the Glass ceiling? Evidence from a repeated randomized experiment. *Review of Economic Studies*, 77, 1301–1328.
- Barnett, J. H. & Karson, M. J. (1989). Managers, values, and executive decisions. *Journal of Business Ethics*, 8, 747-771
- Batson, C. D, Sympson, S. C., Hindman, J. L., Decruz, P., Todd, R. M., Jennings, G. & Burris, C. T (1996). “I’ve been there, too”: Effect on empathy of prior experience with a need. *Personality and Social Psychology Bulletin*, 22, 474-482.
- Benyamini, Y., Leventhal, E. & Leventhal, H. (2000). Gender differences in processing information for making self-assessments of health. *Psychosomatic Medicine*, 63, 354-364.
- Berscheid, E. & Walster, G. W. (1978). *Equity: Theory and research*. Allyn and Bacon, Boston
- Betsch, C. & Kunz, J. J. (2008). Individual strategy preferences and decisional fit. *Journal of Behavioural Decision Making*, DOI: 10.002/bdm.600
- Bigoness, W. J. (1976). Effect of applicant's sex, race, and performance on employers' performance ratings: Some additional findings. *Journal of Applied Psychology*, 61, 80-84.
- Blaylock, B. K & Rees, L. P. (1984). Cognitive style and the usefulness of information. *Decision Sciences*, 15, 74-91.

- Burda, P. C., Vaux, A. & Schill, T. (1984). Social Support Resources: Variation Across Sex and Sex Role. *Personality and Social Psychology Bulletin*, 10, 119-126.
- Butler, T., Giordano, S. & Neren, S. (1985). Gender and sex-role attributes as predictors of utilization of natural support systems during personal stress events. *Sex Roles*, 13, 515-524.
- Brown, C. E. (1982). A false consensus bias in 1980 presidential preferences. *Journal of Social Psychology*, 118, 137-138.
- Chodorow, N. (1974). Family structure and feminine personality in M. Z. Rosaldo and L. Lamphere (Eds.), *Woman, Culture, and Society*. Stanford University Press, Stanford.
- Cohen, S. L.; & Bunker, K. A. (1975). Subtle effects of sex-role stereotypes on recruiters' hiring decisions. *Journal of Applied Psychology*, 60, 566-572.
- Dawes, R. M. (1989). Statistical Criteria for Establishing a Truly False Consensus Effect. *Journal of Experimental Social Psychology*, 25, 1-17.
- Dawes, R. M., McTavish, J., & Shaklee, H. (1977). Behavior, communication, and assumptions about other people's behavior in a commons dilemma situation. *Journal of Personality and Social Psychology*, 35, 1-11.
- Deaux, K. & Emswiller, T. (1974). Explanations of successful performance on sex-linked tasks: What is skill for the male is luck for the female. *Journal on Personality and Social Psychology*, 29, 80-85.
- Dunning, D., Meyerowitz, J. A., & Holzberg, A. D. (1989). Ambiguity and self-evaluation: The role of idiosyncratic trait definitions in self-serving assessments of ability. *Journal of Personality and Social Psychology*, 57, 1082-1090.
- Edgley, G.J. (1992). Type and temperament. *Association Management*, 44, 83-90.
- Engelmann, D. & Strobel, M. (2000). The false consensus effect disappears if representative information and monetary incentives are given. *Experimental Economics*, 3, 241-260.
- Etaugh, C. & Brown, B. (1975). Perceiving the causes of success and failure of male and female performers. *Developmental Psychology*, 11, 103.
- Feather, N. T. (1975). Positive and negative reactions to male and female success and failure in relation to the perceived status and sex-typed appropriateness of occupations. *Journal of Personality and Social Psychology*, 31, 536-548.
- Feather, N. T. (1969). Attribution of responsibility and valence of success and failure in relation to initial confidence and task performance. *Journal of Personality and Social Psychology*, 13, 129-144.

- Feather, N. T.; & Simon, J. G. (1975). Reactions to male and female success and failure in sex-linked occupations: Impressions of personality, causal attribution, and perceived likelihood of difference consequences. *Journal of Personality and Social Psychology*, 31, 20-31.
- Freedman, S. M. (1979). The Effects of Subordinate Sex, Pay Equity, and Strength of Demand on Compensation Decisions. *Sex Roles*, 5, 649-658.
- Gigerenze, G. & Todd, P. M. (1999) *Fast and frugal heuristics: The adaptive toolbox. Simple heuristics that make us smart*. New York, NY, US: Oxford University Press.
- Gilligan, C. (1982). *In a different voice: Psychological theory and women's development*. Harvard University Press, Cambridge, Massachusetts.
- Gilovich, T., Jennings, D. L.. & Jennings, S. (1983). Causal focus and estimates consensus: An examination of the false consensus effect. *Journal of Personality and Social Psychology*, 45, 550-559.
- Goethals, G. R., Allison, S. J., & Frost, M. (1979). Perceptions of the magnitude and diversity of social support. *Journal of Experimental Social Psychology*, 15, 570-581.
- Goldberg, P. (1968). Are women prejudiced against women? *Trans- action*, 5, 28-30.
- Graham, J. (1994). Marketing communication receivers' perception of source-self similarity: some new findings. *Journal of Marketing Theory and Practice*, 2, 11-19.
- Graham, J. F., Stendardi, E. J., Myers, J. K. & Graham, M. (2002). Gender differences in investment strategies: an information processing perspective. *International Journal of Bank Marketing*, 20, 17-26.
- Guilford, J. P. (1980). Cognitive styles: What are they? *Educational and Psychological Measurement*, 40, 715-735.
- Gutek, B. A.; & Stevens, D. A. (1979). Differential responses of males and females to work situations which evoke sex-role stereotypes. *Journal of Vocational Behavior*, 14, 23-32.
- Hagen, R. L.; & Kahn, A. (1975). Discrimination against competent women. *Journal of Applied Social Psychology*, 5, 362- 376.
- Haefner, J. E. (1977). Sources of discrimination among employees: A survey investigation. *Journal of Applied Psychology*, 62, 265-270.
- Halpern, D. F. (2000). *Sex Differences in Cognitive Abilities*. Lawrence Erlbaum Associates

- Hansen, R. D., & Donoghue, J. M. (1977). The power of consensus: Information derived from one's own and others' behavior. *Journal of Personality and Social Psychology*, 35, 294-302.
- Hastie, R.K. & Dawes R. M (2001). *Rational choice in an uncertain world*. London: Sage.
- Heider, F. (1958). *The psychology of interpersonal relations*. Wiley, New York.
- Heilman, M. E. (2001). Description and Prescription: How Gender Stereotypes Prevent Women's Ascent up the Organizational Ladder. *Journal of Social Issues*, 57, 657-674.
- Holter, H. (1971). Sex roles and social change. *Acta Sociologica*, 14, 2-12.
- Hunt, M. (1990). *The compassionate beast: What science is discovering about the humane side of human kind*. New York: William Morrow.
- Jacobson, M. B., & Effertz, J. (1974). Sex roles and leadership: Perceptions of the leaders and the led. *Organizational Behavior and Human Performance*, 12, 383-396.
- Jose, P. E. (2008). ModGraph: A programme to compute cell means for the graphical display of moderational analyses: The internet version, <http://www.victoria.ac.nz/psyc/paul-jose-files/modgraph/modgraph.php>
- Jung, C. G. (1970). *Collected works: Six psychological types*. W. McGuire, Ed. Princeton, N.J.: Princeton University Press.
- Kascak, E. (1978). Sex bias in student evaluations of college professors. *Psychology of Women Quarterly*, 2, 235-243.
- Kahneman, D. & Tversky, A. (1973). On the psychology of prediction. *Psychological Review*, 80, 237-251.
- Kelly, G. A. (1955). *The psychology of personal constructs. Vol. 1*. New York: Norton
- Kelly, H. H. & Stahelsky, A. V. (1970). Social interaction basis of cooperators' and competitors' beliefs about others. *Journal of Personality and Social Psychology*, 16, 66-91.
- Kirton, M.J., & McCarthy, R.M. (1988). Cognitive climate and organizations. *Journal of Occupational Psychology*, 61, 175-184.
- Krueger, J.; & Clement, R. W. (1994). The truly false consensus effect: Ineradicable egocentric bias in social perception. *Journal of Personality and Social Psychology*, 67, 596-610.

- Kulik, J. A., & Taylor, S. E. (1980). Premature consensus on consensus? Effects of sample-based versus self-based consensus information. *Journal of Personality and Social Psychology*, 38, 871-878.
- Leavy, R. L. (1983). Social support and psychological disorder: A review. *Journal of Community Psychology*, 11, 3-21.
- Lenney, E., Gold, J. & Browning, C. (1983). Sex differences in self confidence: the influence of comparison to others' ability level. *Sex Roles*, 9, 925-942.
- Levinson, R. M. (1975). Sex discrimination and employment practice: an experiment with unconventional job inquiries. *Social Problems*, 22, 533-543.
- Manstead, A. S. (1982). Perceived social support for opinions: A test of the magnitude and diversity hypothesis. *British Journal of Social Psychology*, 21, 35-41.
- Marks, G. & Miller, N. (1987). Ten years of research on the false consensus effect: An empirical and theoretical review. *Psychological Bulletin*, 102, 72-90.
- Messick, S. (1976). Personality consistencies in cognition and creativity. In S. Messick (Ed.), *Individuality in learning*. San Francisco: Josey-Bass
- Messick, S. (1984). The nature of cognitive styles: Problems and promises in educational practice. *Educational Psychologist*, 19, 59-74.
- Meyers-Levy, J. (1989). Gender differences in information processing: a selectivity interpretation. In *Cognitive and Affective Responses to Advertising*, Cafferata, P. & Tybout, A. M. eds., Lexington, MA: Lexington
- Meyers-Levy, J. & Maheswaran, D. (1989). Exploring differences in males' and females' processing strategy. *Journal of Consumer Research*, 18, 63-70.
- Meyers-Levy, J. & Sternthal, B. (1991). Gender differences in the use of message cues and judgements. *Journal of Marketing Research*, 28, 84-96.
- Mischel, H. N. (1974). Sex bias in the evaluation of professional achievements. *Journal of Educational Psychology*, 66, 157-166.
- Miller, J. B. (1986). *Toward a new psychology of women*, 2nd ed. Boston, MA: Beacon press.
- Morrison, A. M., White, R. P., van Velsor, E. and Center for creative leadership (1987). *Breaking the Glass-ceiling: Can Women Reach the Top of America's Largest Corporations?* (Reading: Addison-Wesley).
- Mullen, B., Atkins, J. L., Champion, D. S. Edwards, C., Hardy, D., Story, J. E. & Vanderklok, M. (1984). The false consensus effect: A meta-analysis of 115 hypothesis tests. *Journal of Experimental Social Psychology*, 21, 262-283.

- Nieva, V. F. & Gutek (1980). Sex effects on evaluation. *The Academy of Management Review*, 5, 267–276.
- Nisbett, R. E., Borgida, E., Crandall, R., & Reed, H. (1976). Popular induction: Information is not necessarily informative. In J. S. Carroll & J. W. Payne (Eds.), *Cognition and Social Behavior*, Oxford, England: Lawrence Erlbaum, pp 290.
- Nisbett, R. E., & Kunda, Z. (1985). Perception of social distributions. *Journal of Personality and Social Psychology*, 48, 297-311.
- Oltman, P. K. (1968). A portable rod-and-frame apparatus. *Perceptual and Motor Skills*, 26, 503- 506.
- Pacini, R & Epstein, S. (1999). The relation of rational and experiential information processing styles to personality, basic beliefs, and the ratio-bias phenomenon. *Journal of Personality and Social Psychology*, 76, 972-987.
- Paludi, M. A. & Bauer, W. D. (1983). Goldberg Revisited: What's in an Author's Name. *Sex Roles*, 9, 387-390.
- Pheterson, G. T.; Kiesler, S . B.; & Goldberg, P . A. (1971). Evaluation of the performance of women as a function of their sex, achievement, and personal history. *Journal of Personality and Social Psychology* , 19, 110-114.
- Plous, S. (1993). *The psychology of judgment and decision making*. New York: MacGraw-Hill.
- Poole, M. (1977). Social class-sex contrasts in patterns of cognitive style: a cross cultural replication. *Psychological Reports*, 50, 19-26.
- Putrevu, S. (2001). Exploring the origins of processing differences between men and women: implications for advertisers. *Academy of Marketing Science Review*, 10, online: <http://www.vancouver.wsu.edu/amsrev/theory/putrevu10-01.html>. 14.04.2011.
- Riding, R. & Cheema, I. (1991). Cognitive styles – an overview and integration. *Educational Psychology*, 11, 193-215.
- Rosen, B.; & Jerdee, T. H. (1974). Influence of sex-role stereotypes on personnel decisions. *Journal of Applied Psychology*, 59, 9-14.
- Rosen, B.; Jerdee, T. H.; & Prestwich, T . L. (1975). Dual-career marital adjustment: Potential effects of discriminatory managerial attitudes. *Journal of Marriage & the Family*, 37, 565-572.

- Ross, L.; Greene, D.; & House, P. (1976). The “False Consensus Effect”: An Egocentric Bias in Social Perception and attribution Processes. *Journal of Experimental Social Psychology*, 13, 279–301.
- Ross, L., Lepper, M. P., Strack, F., & Steinmetz, J. (1977). Social explanation and social expectation: Effects of real and hypothetical explanations on subjective likelihood. *Journal of Personality and Social Psychology*, 35, 817-829.
- Sanders, G. S., & Mullen, B. (1983). Accuracy in perceptions of consensus: Differential tendencies of people with majority and minority positions. *European Journal of Social Psychology*, 13, 57-70.
- Schweiger, D. M. (1983). Measuring managers’ minds: a critical reply to Robey and Taggart. *Academy of Management Review*, 8, 43-51.
- Selten, R. & Ockenfels, A. (1996). An experimental solidarity game. *Journal of Economic Behaviour and Organization*, 34, 517-539.
- Shaw, E. A (1972). Differential impact of negative stereotyping in employee selection. *Personnel Psychology*, 25, 333-338.
- Sherman, S. J., Presson, C. C., Chassin, L., Corty, E. & Olshavsky, R. (1983). The false consensus effect in estimates of smoking prevalence: Underlying mechanisms. *Personality and Social Psychology Bulletin*, 9, 197-207.
- Stanovich, K. E. (1996). *How to think straight about psychology*. HarperCollins
- Streufert, S., & Nogami, G.Y. (1989). Cognitive style and complexity: Implications for I/O Psychology. In: C.L. Cooper & I. Robertson (Eds.), *International Review of Industrial and Organizational*, Chichester: Wiley.
- Talbot, R.P. (1989). Valuing differences in thinking styles to improve individual and team performance. *National Productivity Review*, 9, 35-50.
- Taynor, J. & Deaux, K. (1973). When women are more deserving than men: Equity, attribution, and perceived sex differences. *Journal of Personality & Social Psychology*, 28, 360-367.
- Taynor, J. & Deaux, K (1975). Equity and perceived sex differences: Role behavior as defined by the task, the mode, and the action. *Journal of Personality and Social Psychology*, 32, 381-390.
- Terborg, J. R & Ilgen, D. R. (1975). A theoretical approach to sex discrimination in traditionally masculine occupations. *Organizational Behavior and Human Performance*, 13, 352-376.

- van den Broeck, H., Vanderheyden, K and Cools, E. (2003). The field of cognitive styles: From a theoretical review to the construction of the style inventory. *Vlerick Leuven Working paper series*, 26, 1-29.
- van der Pligt, J. (1984). Attributions, false consensus, and valence: Two field studies. *Journal of Personality and Social Psychology*, 46, 57-68.
- Wachtel, P. L.(1986) Style and capacity in analytic functioning. *Journal of Personality*, 36, 202-212.
- Watkins, D., Akande, A., & Fleming, J., Maznah, I., Lefner, K., Regmi, M., Watson, S., Yu, J., Afair, J., Cheng, C., Gerong, A., McInerney, D., Sunita, E. M., & Habtamu, S. (1998). Cultural dimensions, gender, and the nature of self concept: A fourteen country study, *International Journal of Psychology*, 33, 17-31.
- Watkins, D., Cheng, C., Mpofu, E., Olowu, S., Singh-Sengupta, S & Regmi, M. (2003). Gender differences in self-construal: How generalizable are Western findings? *Journal of Social psychology*, 143, 501-519.
- Webster, E. C. (1964). *Decision making in the employment interview*. Montreal: Industrial Relations Center, McGill University.
- Weiner, B., Frieze, I. H., Kukla, A., Reed, L., Rest, S., & Rosenbaum, R. M. (1971). *Perceiving the causes of success and failure*. Morristown, N.J.: General Learning Press
- Witkin, H. A. (1965). Psychological differentiation and forms of pathology. *Journal of Abnormal Psychology*, 70, 317-336.
- Witkin, H. A. (1976). Cognitive style in academic performance and in teacher-student selections. In S. Messick (Ed.), *Individuality in learning*. San Francisco: Josey-Bass.
- Witkin, H. A., Dyk, R. B., Faterson, H. F. & Karp, S. A. (1962). *Psychological Differentiation*. New York: Wiley.
- Witkin, H. A., Oltman, P. K., Ruskin, E.. & Karp, S. A. (1971). *A manual for the embedded figure test*. Palo Alto, Cal.: Consulting Psychologist Press.
- Woodrow, H. (1939). The common factors in fifty-two tests. *Psychometrika*, 4, 99-108.
- Woolhouse, L. S. & Bayne, R. (2000) Personality and the use of intuition: individual differences in strategy and performance on an implicit learning task. *European Journal of Personality*, 14, 157-169
- Zajonc, R. B (1980). On the primacy effect. *American psychologist*, 39, 117-123.

Appendix A, stimulus scenario

Bente Hansen er 42 år gammel. Hun har to barn og bor sammen med sin mann og barna i et boligområde utenfor en middels stor by i Norge. Bente er lærer på videregående skole. Skolen har over lengre tid kjørt holdningskampanjer for å få bukt med problemer skolen har hatt med elever som jukser. Klassen til Bente skal ha prøve i spansk denne dagen. Dette er en viktig prøve i forhold til karaktergivning i faget. En av Bentes pliktoppfyllende elever har lenge slitt med søvnproblemer, konsentrasjonsvansker og dårlig matlyst på grunn av et dramatisk dødsfall i nær familie ganske nylig. Eleven kommer av denne grunn uforberedt til prøven og er fortvilet og lei seg. Fordi prøven er så viktig for elevens karakter i faget, har eleven funnet ut at en jukselapp er eneste utvei akkurat denne gangen. Midtveis i prøven oppdager Bente at eleven jukser. Bente vet at dette er en elev som vanligvis er pliktoppfyllende og samvittighetsfull. Bente kjenner at hun blir både overrasket og skuffet over eleven. Bente finner det riktig å ta eleven ut av timen og gi en kraftig irettesettelse. Bente velger i tillegg å sende eleven til rektors kontor for å markere alvorret i situasjonen og skolens offisielle holdning i forhold til slike forseelser.

1. Hvor rasjonelt synes du Bente taklet denne situasjonen?
Veldig lite 1 2 3 4 5 6 7 Veldig mye
2. I hvor stor grad synes du Bente lot seg styre av følelser i denne situasjonen?
Veldig lite 1 2 3 4 5 6 7 Veldig mye
3. I hvor stor grad tror du Bente tenkte logisk gjennom denne situasjonen?
Veldig lite 1 2 3 4 5 6 7 Veldig mye
4. Hvor emosjonell synes du Bente var i denne situasjonen?
Veldig lite 1 2 3 4 5 6 7 Veldig mye
5. I hvor stor grad fikk du inntrykk av at Bente tenkte gjennom alle delene av situasjonen før hun handlet?
Veldig lite 1 2 3 4 5 6 7 Veldig mye
6. Hvor mye tror du Bente stolte på magefølelsen sin i denne situasjonen?
Veldig lite 1 2 3 4 5 6 7 Veldig mye

Appendix A, stimulus scenario (English version)

Bente Hansen is 42 years old. She has two children and lives with her husband and the children in a residential area outside a Norwegian city of medium size. Bente is a teacher at an upper secondary school. The school has over a longer period held a campaign combating the problems the school has been experiencing with students cheating at tests. Today Bente's class is having a Spanish test. This is an important test for the final grade in the subject. One of Bente's conscientious students has been suffering from problems with sleep and concentration and lack of appetite for some time now, caused by a relatively recent death in the closest family. The student shows up for the test unprepared, and is distraught and upset. As the test is so important for the final grade, the student has decided that bringing a cheat sheet is the only resort on this particular day. In the middle of the test Bente discovers that the student is cheating. Bente knows that this is a student who is usually very conscientious. Bente feels very disappointed and surprised. Bente finds it appropriate to remove the student from the test, and administer a strong reprimand. Bente also chooses to send the student down to the head master, in order to emphasise the seriousness of the situation.

1. How rationally do you feel Bente handled the situation?
Very much 1 2 3 4 5 6 7 Very little
2. To what degree do you feel Bente was lead by emotions in this situation?
Very much 1 2 3 4 5 6 7 Very little
3. To what degree do you think Bente thought logically through the situation?
Very much 1 2 3 4 5 6 7 Very little
4. How emotionally do you feel Bente acted in this situation?
Very much 1 2 3 4 5 6 7 Very little
5. To what degree do you perceive that Bente thought through all the components of the situation before making a decision?
Very much 1 2 3 4 5 6 7 Very little
6. How much do you feel Bente trusted her gut feeling in this situation?
Very much 1 2 3 4 5 6 7 Very little